

CLAIMS

What is claimed is:

1. A luminaire, comprising:
 - a light source;
 - a light guide that receives light radiating from the light source; and
 - a plurality of tilted prism arrays for redirecting the light in a first direction, wherein the plurality of prism arrays periodically alternate orientation along the light guide.
2. The luminaire of Claim 1 wherein the plurality of prism arrays include linear prisms.
3. The luminaire of Claim 2 wherein the linear prisms have included angles of 25, 90, and 65 degrees.
4. The luminaire of Claim 1 wherein the prism arrays include peaks and valleys along a first axis.
5. The luminaire of Claim 1 wherein the prism arrays include peaks and valleys along a second axis different than the first axis.
6. The luminaire of Claim 5 wherein the second axis is substantially perpendicular to the first axis.
7. The luminaire of Claim 5 wherein the second axis is offset about 60 degrees relative to the first axis.

8. The luminaire of Claim 5 wherein the prism arrays include peaks and valleys along a third axis that is different than the second axis and the first axis.
9. The luminaire of Claim 8 wherein the third axis is offset about 60 degrees relative to the second axis.
10. The luminaire of Claim 1 wherein the light guide is substantially solid.
11. The luminaire of Claim 10 wherein the light guide includes polymethyl methacrylate.
12. The luminaire of Claim 1 wherein the plurality of prism arrays are disposed on a top surface of the light guide.
13. The luminaire of Claim 1 further comprising a reflective surface below the light surface for redirecting light into the light guide.
14. The luminaire of Claim 1 further comprising a reflective surface adjacent at least one end of the light guide for redirecting light toward the light guide.
15. The luminaire of Claim 1 further comprising a baffle for scattering light into the light guide.
16. The luminaire of Claim 1 wherein the prism arrays include prism facets having more than one plane on at least one facet.
17. The luminaire of Claim 1 wherein the prism arrays include curved prism tips.
18. The luminaire of Claim 1 wherein the prism arrays include curved valleys.

19. An optical microstructure comprising a plurality of tilted prism arrays that periodically alternate orientation of the tilted prism arrays along a first axis.
20. The optical microstructure of Claim 19 wherein the prism arrays periodically alternate orientation of the tilted prism arrays along a second axis.
21. The optical microstructure of Claim 19 wherein the prism arrays periodically alternate orientation of the tilted prism arrays along a third axis.
22. The optical microstructure of Claim 19 wherein the optical microstructure is disposed on first surface of a film, further comprising a plurality of prism arrays on a second surface of the film.
23. The optical microstructure of Claim 22 wherein the plurality of prism arrays on the second surface are tilted and periodically alternate orientation along at least one axis.
24. The luminaire of Claim 19 wherein the prism arrays include prism facets having more than one plane on at least one facet.
25. The luminaire of Claim 1 wherein the prism arrays include curved prism tips.
26. The luminaire of Claim 1 wherein the prism arrays include curved valleys.
27. A luminaire comprising:
 - a light source;
 - a light guide that receives light radiating from the light source; and
 - a plurality of tilted prism arrays for redirecting the light exiting the light guide, the prism arrays periodically alternating orientation along a first axis.

28. The luminaire of Claim 27 wherein the prism arrays periodically alternate orientation along a second axis.
29. The luminaire of Claim 28 wherein the prism arrays periodically alternate orientation along a third axis.
30. The luminaire of Claim 27 wherein the plurality of prism arrays are disposed on a top surface of the light guide.
31. A method for redirecting light comprising:
 - providing a light source;
 - receiving light radiating from the light source in a light guide; and
 - redirecting the light in a first direction with a plurality of tilted prism arrays that periodically alternate orientation along a first axis.
32. The method of Claim 31 further comprising the step of periodically alternating the plurality of tilted prism arrays along a second axis different than the first axis.
33. The method of Claim 31 further comprising the step of periodically alternating the plurality of tilted prism arrays along a third axis different than the second axis and the first axis.
34. The method of Claim 31 further comprising the step of redirecting the light radiating from the light source toward the plurality of tilted prism arrays.